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In re Application of
Zak

Serial No.: **10/801,779**

Filed: **March 16, 2004**

For: **Apparatus and Method for Voice
Activated Communication**

Docket No: **2002-047**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450



PATENT PENDING

Examiner: **Olisa Anwahn**

Group Art Unit: **2645**

Confirmation No.: **3098**

CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being:

- ☒ deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
- ☐ transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (571) 273-8300.

2/21/06
Date

Kathleen Koppen
Kathleen Koppen

DECLARATION OF ROBERT ZAK

I, Robert Zak, hereby declare as follows:

1) I am the named inventor of the invention disclosed in the above-mentioned application.

On or about August 11, 2003, I conceived an invention tentatively entitled "Method for Voice-Activated Push-To-Talk Communications" while employed at Sony Ericsson, Inc., the assignee of the present application. I prepared an invention disclosure describing my invention and submitted the disclosure to in-house counsel not later than August 15, 2003. A copy of my disclosure is attached hereto as Exhibit 1.

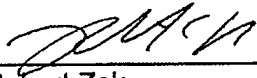
2) My invention was approved for patenting by Sony Ericsson in the course of its normal patent review process. On or about January 14, 2004, Sony Ericsson sent a request letter to patent counsel at Coats and Bennett, P.L.L.C., requesting that their firm prepare and file an application covering my invention. The request letter stipulated that a first draft be provided to me for review within six weeks. A copy of that request letter is attached hereto as Exhibit 2.

Application Ser. No. 10/801,779
Attorney Docket No. 2002-047
Client Ref. No. PU03 0183US1

- 3) On or about February 25, 2004, Coats and Bennett prepared a first draft of the patent application covering my invention and sent it to me for review and comments. A copy of the cover letter accompanying the first draft is attached hereto as Exhibit 3.
- 4) I reviewed the first draft. Coats and Bennett sent a final draft of my application along with the formal paperwork for me to sign on or about March 16, 2004. A copy of the cover letter accompanying the final draft is attached hereto as Exhibit 4.
- 5) The application was filed with the U.S.P.T.O. on or about March 16, 2004, receiving U.S. Application Serial No. 10/801,779. A copy of the filing receipt is attached hereto as Exhibit 5.

I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

16-Feb-2006
Date


Robert Zak



Sony Ericsson

Last revised: 4-10-03

Approved by: Nelson Wakefield

Page

EXHIBIT

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Invention Disclosure Form

Docket No. 002 0183

Date opened: _____

1. Invention Title: Method for Voice-Activated Push-to-Talk Communications

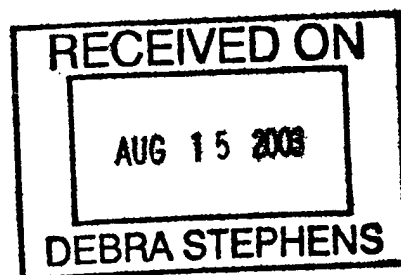
2. Submitted by:	1 st Inventor	2 nd Inventor	3 rd Inventor
(a) Full Name (3 names or 2 names & 1 initial)	Rob Zak		
(b) Home Address	301 Wedgemere St		
(c) Work Phone	919 472-7223		
(d) Citizenship	USA		
(e) Pay No. (5 digit)	24568		
(f) Manager	Allen East		
(g) Cost Center	13168		
(h) Your Product Unit			
CDMA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GSM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CTO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M2M	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) Your Group:			
Hardware	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mechanics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: DSP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Date the invention was conceived :

8/11/03

5. Identify dates :

- Past disclosure of the invention outside the company: none
- Future disclosure of the invention outside the company: none
- Publication of the invention: none
- Discussion with business partners about the invention: none



6. Related known products, patents, disclosures, or publications: none

7. Please complete the second page of this form completely describing your invention, along with any other relevant documentation.

The invention described in the attached invention disclosure is hereby submitted under my employment agreement with SEMC

Inventor's full signature	Date	Witnessed, read, understood, and signed by	Date
(1)		(1)	
(2)		(2)	
(3)		(3)	

Submit to: Mailbox "SEMC US Invention Disclosures" & send a signed copy to Docket Coordinator (Nancy Ferguson) 8001-4ALegal



Invention Disclosure Form

Docket No. _____

Invention Title: Method for blocking classes of incoming calls

1. What area of technology is your invention in? (Check 2 maximum)

- | | | |
|--|---|--|
| <input type="checkbox"/> Accessories | <input type="checkbox"/> Mechanics | <u>Software</u> |
| <input checked="" type="checkbox"/> Acoustic / audio | <input type="checkbox"/> Packaging | <input type="checkbox"/> Applications |
| <input type="checkbox"/> Antennas | <input type="checkbox"/> Phone architectures/RF | <input type="checkbox"/> Diagnostic/tools |
| <input type="checkbox"/> Baseband / digital | <input checked="" type="checkbox"/> Phone features/concepts | <input type="checkbox"/> Java |
| <input type="checkbox"/> Batteries / chargers | <input type="checkbox"/> Systems | <input type="checkbox"/> Physical layer/firmware/DSP |
| <input type="checkbox"/> Bluetooth | <input type="checkbox"/> Systems algorithms | <input type="checkbox"/> Positioning/GPS |
| | <input type="checkbox"/> Displays / LCDs | <input type="checkbox"/> Protocol |

2. What are the benefits of your invention?

- | | | |
|---|---|---|
| <input type="checkbox"/> Appearance | <input checked="" type="checkbox"/> Easier to use | <input checked="" type="checkbox"/> New feature |
| <input type="checkbox"/> Better performance | <input type="checkbox"/> Efficiency | <input type="checkbox"/> Power saving |
| <input type="checkbox"/> Cost savings | <input type="checkbox"/> Improved audio | |

3. What problem is solved by your invention and how was it solved before?

Cite any known inventions for which yours is a replacement.

Support for a push-to-talk protocol for packet data over GSM cellular networks is planned for future handsets, similar to established private radio systems and Nextel Direct Connect services. This service allows point-to-multipoint communication, quick-access (vs. cellular call setup), and low-cost (vs. cellular circuit-switched channels), but it is based on the user pressing and holding a button on the handset while speaking. The typical use of this service also supports a speakerphone mode, where the user does not need to hold the phone to his/her ear to communicate. The problem with the typical implementation of push-to-talk is that it is difficult to use while driving an automobile or other activities where the user cannot hold the phone and depress a button while talking.

4. What is your invention and how is it better than prior solutions? Describe in detail the structure, and how to make and use your invention, particularly the features which make it advantageous. Include drawings, flow charts, block diagrams, schematics, etc.

A solution to the problem of not having to hold the phone while talking would be to implement a voice keyword-activated version of push-to-talk ("speak-to-talk") or a semi- or fully-automatic version based on voice activity detection.

1. Starting a push-to-talk session: The user could "activate" the session for the first time by pressing a button, selecting an option from a displayed menu, or any other physical action. As a another embodiment of the session activation, a voice activated keyword could be used (see below).

2. Starting a voice transmission (instead of pressing a push-to-talk button): Once the session is activated, each transmission of voice audio would be started using voice keyword activation. This voice keyword activation would operate similar to present "magic word" speech recognition, where the phone continuously monitors the microphone audio signal. When a special keyword utterance is detected, the phone would start transmitting the audio signal as if the user had

The invention described in the attached invention disclosure is hereby submitted under my employment agreement with SEMC

Inventor's full signature	Date	Witnessed, read, understood, and signed by	Date
(1)		(1)	
(2)		(2)	
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pressed the "talk" button. The keyword could be either user-trained (similar to existing Sony Ericsson GSM phones) or a predefined speaker-independent keyword. Both speaker-dependent (user-trained) and speaker-independent methods for speech recognition are well known and have been implemented in various products and telephony networks.

As another embodiment, the start of each transmission could be automatic, based on voice-activity detection. Voice activity detection is also well-known and is in fact standardized as part of many speech vocoders, including those used in GSM networks. The voice activity detector, which is usually implemented in a digital signal processor along with vocoders and other audio functions, monitors the microphone audio signal and provides a single real-time output to indicate whether speech is active or inactive.

3. Stop transmission (instead of releasing the button): The user can end each transmission by simply not talking for a pre-defined period of time, for example one second. As another embodiment, the phone could recognize another keyword dedicated for stopping a transmission. As another possible embodiment for stopping transmission, the phone could detect a pause in voice activity, temporarily stop sending the microphone audio and instead transmit artificial comfort noise or silence while waiting for the user to confirm that he/she is finished by speaking the "stop transmission" keyword or by speaking the "start transmission" keyword to continue. This method would prevent an unrecognized "stop transmission" keyword from accidentally being transmitted. The phone would indicate such a "pause" interval by emitting a beep or other audio signal to alert the user that a keyword is expected.

In addition to the real-time operation of push-to-talk described above, there may be situations where the user wants to pre-record a message, verify that it is correct, then transmit it (similar to a voice-mail message). The same methods of keyword recognition and voice activity detection can be applied to this method for starting and stopping the recording of the audio stream.

The invention described in the attached invention disclosure is hereby submitted under my employment agreement with SEMC

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(2)		(2)	
(3)		(3)	

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Sony Ericsson

Sony Ericsson Mobile Communications (USA) Inc.
7001 Development Drive
P.O. Box 13969
RTP, North Carolina 27709

EXHIBIT

tabbles®

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VIA FEDERAL EXPRESS

January 14, 2004

David E. Bennett, Esq.
Coats & Bennett
1400 Crescent Green
Suite 300
Cary, NC 27511

REQUEST TO FILE PATENT APPLICATION

SEMC Docket No.: U03 0183

Title: Method for Voice-Activated Push-To-Talk Communications

Inventor: Robert Zak

Dear David:

Please prepare and file a patent application in the U.S. Patent and Trademark Office on the above referenced invention. A copy of the invention disclosure and the inventor's questionnaire is enclosed. Any potential statutory bar date should be identified in one of these two documents; however, any potential bars should also be verified with the inventor.

A first draft of the application should be submitted to the inventor within six (6) weeks. Please advise if there is any problem with this schedule.

All rights in this application are to be assigned to Sony Ericsson Mobile Communications AB.

If you wish to discuss any matter regarding this application, please do not hesitate to contact me. Please contact the person noted above for any technical assistance in preparing the application.

Best regards,

Debra K. Stephens
General Counsel, Intellectual Property

enclosures



February 25, 2004

Mr. Rob Zak
Sony Ericsson
7001 Development Drive
Research Triangle Park, NC 27709

RE: Your reference: U03 0183
Our reference: 2002-047
APPARATUS AND METHOD FOR VOICE ACTIVATED COMMUNICATION

Dear Mr. Zak:

Enclosed please find the first draft of the above-referenced application. Please carefully review the application and drawings and contact me with any changes or comments you may have. If you are satisfied with the application, please let me know so our office can prepare the formal paperwork for your signature.

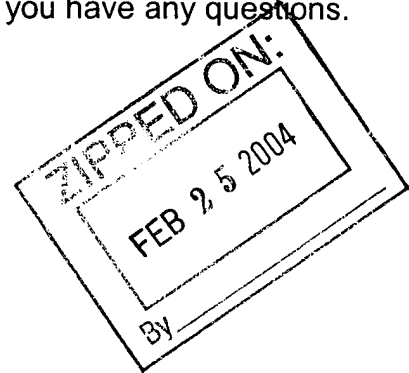
As always, please do not hesitate to contact me if you have any questions.

Sincerely,

Stephen A. Herrera

cc: Debra K. Stephens

SAH/rwg
Enclosure



Coats & Bennett

1400 Crescent Green, Suite 300 Cary, North Carolina 27511
Phone: (919) 854-1844 Facsimile: (919) 854-2084

March 16, 2004

Mr. Robert Zak
Sony Ericsson Mobile Communications (USA) Inc.
7001 Development Drive
Research Triangle Park, NC 27709

RE: Your reference number: U03-0183-US1
Our reference number: 2002-047
Apparatus and Method for Voice Activated Communication

Dear Rob:

Enclosed please find the final draft of the above-identified invention. Also attached is the formal paperwork. If you find the application to be in order, please sign and date where indicated. Please note that the assignment needs to be notarized.

It would expedite the filing of the application if you could fax me the signed documents and return the originals by mail.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Stephen A. Herrera

/kk
Encl



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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/801,779	03/16/2004	2641	1356	2002-047	7	43	5

24112
COATS & BENNETT, PLLC
P O BOX 5
RALEIGH, NC 27602

CONFIRMATION NO. 3098

FILING RECEIPT



OC000000012845924

Date Mailed: 06/02/2004

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Robert Zak, Apex, NC;

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 06/02/2004

Projected Publication Date: 09/22/2005

Non-Publication Request: No

Early Publication Request: No

Title

Apparatus and method for voice activated communication

Preliminary Class

379

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